Los Alamos
NATIONAL LABORATORY
EST. 1943

Environment, Safety, Health & Quality
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Los Alamos, New Mexico 87545
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National Nuclear Security Administration
Los Alamos Site Office, A316
3747 West Jemez Road
Los Alamos, New Mexico 87545
(505) 667-5794/FAX (505) 667-5948

Date: December 9, 2010
Refer To: ENV-RCRA-10-239
LAUR: 10-08215

Ms. Sonia Hall
U.S. Environmental Protection Agency, Region 6
Water Quality Protection Division
Planning and Analysis Branch (6 EN)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Dear: Ms. Hall:

SUBJECT: LOS ALAMOS NATIONAL LABORATORY, NPDES PERMIT NO. NM0028355, NOTICE OF PLANNED CHANGE AT NPDES OUTFALL 051

The National Pollutant Discharge Elimination System (NPDES) Permit No. NM0028355 for the National Nuclear Security Administration (NNSA) and Los Alamos National Security, LLC (LANS) requires the permittee(s) to notify the U. S. Environmental Protection Agency (EPA) regarding any physical alterations or additions to the permitted facility that could significantly change the nature or increase the quantity of pollutants discharged (see Part III.D.1.a. *Reporting Requirements*).

The Radioactive Liquid Waste Treatment Facility (RLWTF) plans to add hardness to the facility effluent waters. Hardness will be added by the addition of soluble calcium and/or magnesium salts to the RLWTF process water or effluent water. The purpose of adding hardness to the water is to reduce the toxicity of copper and zinc to the *Daphnia Pulex* organism. These metals have been shown to be major contributors to the failed Whole Effluent Toxicity (WET) tests at Outfall 051.

The RLWTF treatment processes reduce the hardness of the effluent water to essentially zero hardness by the use of the clarifier (which operates as a softener) and the reverse osmosis treatment operation. This reduction of hardness exacerbates the toxicity of the copper and zinc to the *Daphnia Pulex* organism.

The hardness salts will be added either to the North or South Frac Tanks or to Tank 38. The hardness of the RLWTF effluent water will be adjusted to approximately 75 mg/L as $CaCO_3$ using the calcium and/or magnesium salts.

A copy of the revised treatment schematic is enclosed (see Enclosure 1).

Please contact Marc Bailey at (505) 665-8135 or Mike Saladen at (505) 665-6085 of the Water Quality and RCRA Group (ENV-RCRA) if you have questions or need additional information.

Sincerely,

Anthony R. Grieggs
Group Leader
Water Quality & RCRA Group (ENV-RCRA)
Los Alamos National Security, LLC

Sincerely,

Gene Turner
Environmental Permitting Manager
Environmental Projects Office
Los Alamos Site Office
National Nuclear Security Administration

ARG:GT:MB/lm

Enclosure: a/s

Cy: Brent Larsen, USEPA Region 6, Dallas, TX, w/enc.
Isaac Chen, USEPA Region 6, Dallas, TX, w/enc.
Glenn Saums, NMED/SWQB, Santa Fe, NM, w/enc.
William Olson, NMED/GWQB, Santa Fe, NM, w/enc.
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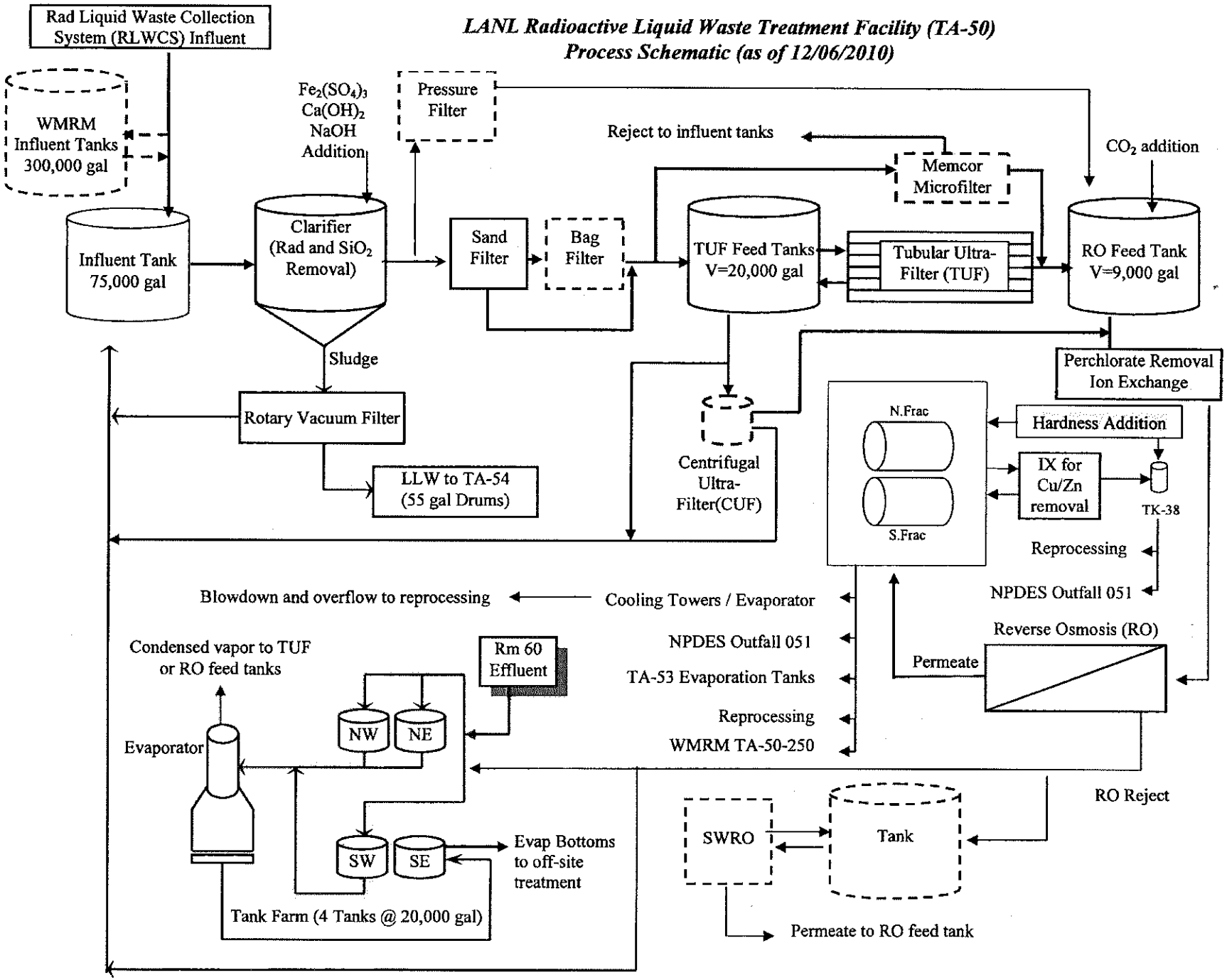
Michael B. Mallory, PADOPS, w/o enc., AI02
Robert L. McQuinn, ADHHO, w/o enc., K778
Carl A. Beard, ADSMS, w/o enc., E585
J. Chris Cantwell, ADESHQ, w/o enc., K491
Dennis Hjeresen, ENV-DO, w/o enc., (E-File)
Robert Mason, TA55-DO, w/enc., E583
Hugh McGovern, TA-55-RLW, w/enc., E518
Pete Worland, TA-55-RLW, w/enc., E518
Mike Saladen, ENV-RCRA, w/enc., (E-File)
Marc Bailey, ENV-RCRA, w/enc., (E-File)
Bob Beers, ENV-RCRA, w/enc., (E-File)
Cindy Blackwell, LC-LESH, w/o enc., A187
ENV-RCRA File, w/enc., K490
IRM-RMMSO, w/enc., Al50

ENCLOSURE 1


LANL Radioactive Liquid Waste Treatment Facility (TA-50)
Process Schematic (as of 12/06/2010)
Rad Liquid Waste Collection System (RLWCS) Influent
WMRM Influent Tanks 300,000 gal
Influent Tank 75,000 gal
$Fe_2(SO_4)_3$ $Ca(OH)_2$ NaOH Addition
Clarifier (Rad and SiO_2 Removal)
Sludge
Pressure Filter
Sand Filter
Bag Filter
Reject to influent tanks
Memcor Microfilter
TUF Feed Tanks V=20,000 gal
Tubular Ultra-Filter (TUF)
CO_2 addition
RO Feed Tank V=9,000 gal
Perchlorate Removal Ion Exchange
Rotary Vacuum Filter
LLW to TA-54 (55 gal Drums)
Centrifugal Ultra-Filter(CUF)
N.Frac
S.Frac
Hardness Addition
IX for Cu/Zn removal
TK-38
Reprocessing
NPDES Outfall 051
Blowdown and overflow to reprocessing
Cooling Towers / Evaporator
NPDES Outfall 051
TA-53 Evaporation Tanks
Reprocessing
WMRM TA-50-250
Reverse Osmosis (RO)
Permeate
RO Reject
Condensed vapor to TUF or RO feed tanks
Rm 60 Effluent
Evaporator
NW
NE
SW
SE
Evap Bottoms to off-site treatment
Tank Farm (4 Tanks @ 20,000 gal)
SWRO
Tank
Permeate to RO feed tank